CHAPTER ONE: INTRODUCTION

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COMMON ACRONYMS/ABBREVIATIONS USED IN CHAPTER 1

BMP – Best Management Practices
CMAP – Chicago Metropolitan Agency for Planning
DPR – Des Plaines River
Illinois EPA – Illinois Environmental Protection Agency
DRWW – DPR Watershed Workgroup
SMC – Lake County Stormwater Management Commission
SMU – Subwatershed Management Unit
TMDL – Total Maximum Daily Load
USEPA – United States Environmental Protection Agency

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1 INTRODUCTION

1.1 WHAT IS A WATERSHED?

A **watershed** is the area of land drained by a river, stream, or other body of water. Other common names given to watersheds include **drainage basins** (or **Subwatershed Management Units (SMUs)**).

As simple as the definition sounds, a watershed is actually a complex interaction between ground, climate, water, vegetation, and animals. In today's developed watersheds, other elements such as sewage, agricultural drainage, **impervious surfaces**, stormwater and erosion can all be detrimental to the health of the watershed.

The health of a waterbody is a direct reflection of how the land in the watershed is used and managed. Some of the benefits of a healthy wateshed are improved water quality, fewer flooding problems, enhanced wildlife habitat, and opportunities for education and recreation.

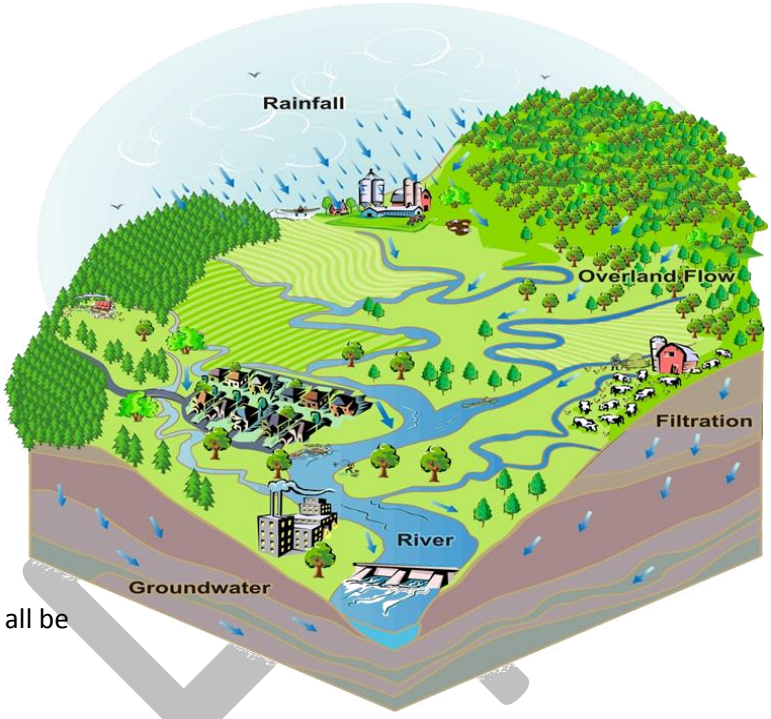

Figure 1-1: What is a Watershed?

A watershed is the area of land drained by a river, stream, or other body of water. Watershed diagram courtesy of Arkansas Watershed Advisory.

1.2 DES PLAINES RIVER WATERSHED

The DPR watershed stretches 480 square miles (306,927 acres). The DPR watershed planning area for this watershed based plan encompasses the central portion of the entire DPR watershed; approximately 235 square miles (150,361 acres). The planning area is comprised of the central portion of Lake County, Illinois; Kenosha County, Wisconsin; and upper Cook County, Illinois.

WATERSHED: Land area that drains to a given stream or river. The land area above a given point on a waterbody (river, stream, lake, wetland) that contributes runoff to that point is considered the watershed.

DRAINAGE BASIN: Land surface region drained by a length of stream channel; usually 1,000 to 10,000 square miles in size.

SUBWATERSHED MANAGEMENT UNIT (SMU): Small unit of a watershed or subwatershed that is used in watershed planning efforts.

IMPERVIOUS SURFACES: A surface that does not allow water to infiltrate to the soil layer, includes pavement, rooftops, roads, etc…

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The Des Plaines River begins just west of Kenosha, Wisconsin and flows south through Racine and Kenosha Counties in Wisconsin, and then through Lake, Cook, and Will Counties in Illinois. The river then joins the Sanitary and Ship Canal in Lockport, flows west through Joliet, before converging with the Kankakee River to form the Illinois River. The Illinois River then flows into the Mississippi River, which flows south to the Gulf of Mexico.

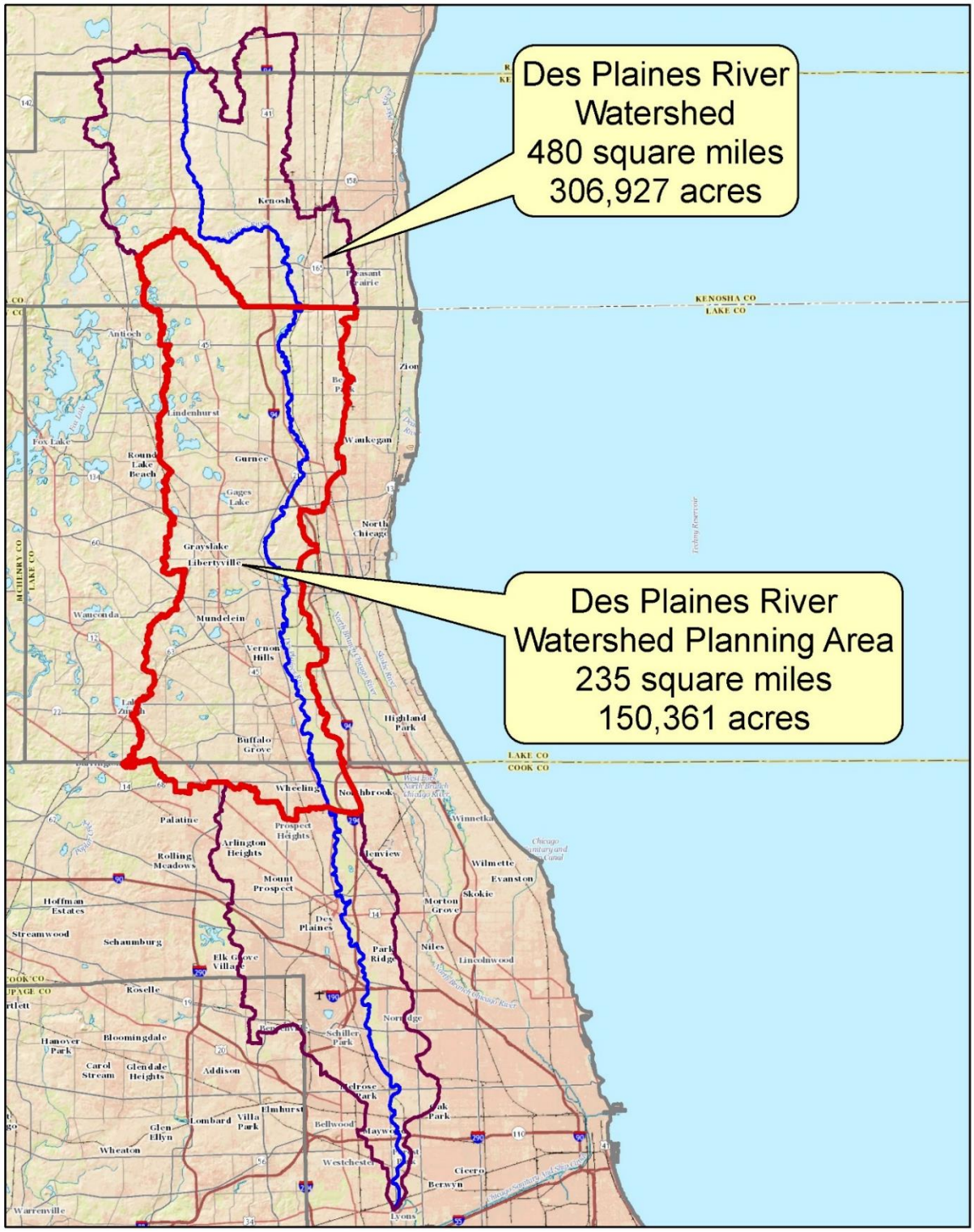

Figure 1-2: Des Plaines River Watershed Location Map

NOTEWORTHY SUBWATERSHEDS

North Mill Creek	Upper Des Plaines River
Mill Creek	Lower Des Plaines River
Buffalo Creek	Newport Drainage Ditch
Indian Creek	Aptakisic Creek
Bulls Creek-Bulls Brook	

Within the planning area there are portions of 38 municipalities and 18 townships. The planning area includes 240 miles of stream, 28,863 acres of wetland, and 114 named lakes. The open water total area in the watershed is approximately 7,975 acres.

1.3 WATERSHED PLAN PURPOSE

SMC took the lead to develop this watershed plan for the DPR Watershed. The purpose of this effort was to come up with a plan to restore watershed lakes, streams and wetlands to a healthy condition while reducing the impacts of water pollution and flood damage, and providing opportunities for watershed stakeholders to have a significant role in the process.

This plan was developed with, and generally accepted and supported by, a broad representation of watershed stakeholders who participated in the planning process.

A significant outcome of this planning effort and the implementation of the plan going forward is to return the sixty-one waterbodies that are presently listed as being **"impaired"** on the Illinois 303(d) list of impaired waters to conditions that fully support their designated uses.

This plan identifies BMPs to remedy or mitigate losses of natural resources, water quality degradation, and flood damages.

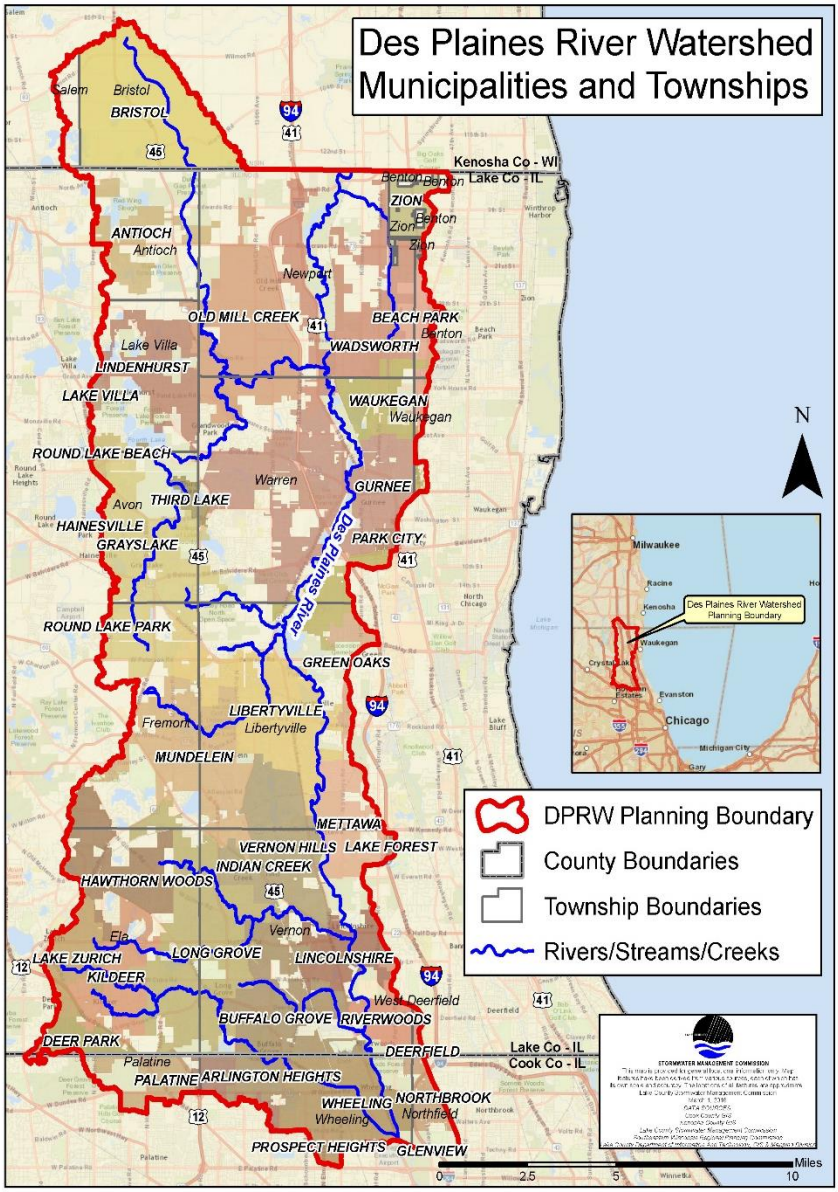

Figure 1-3: Des Plaines River Watershed Municipalities and Townships

IMPAIRED WATERS: The Clean Water Act (CWA) requires states to identify waters that do not or are not expected to meet applicable water quality standards with current pollution control technologies alone.

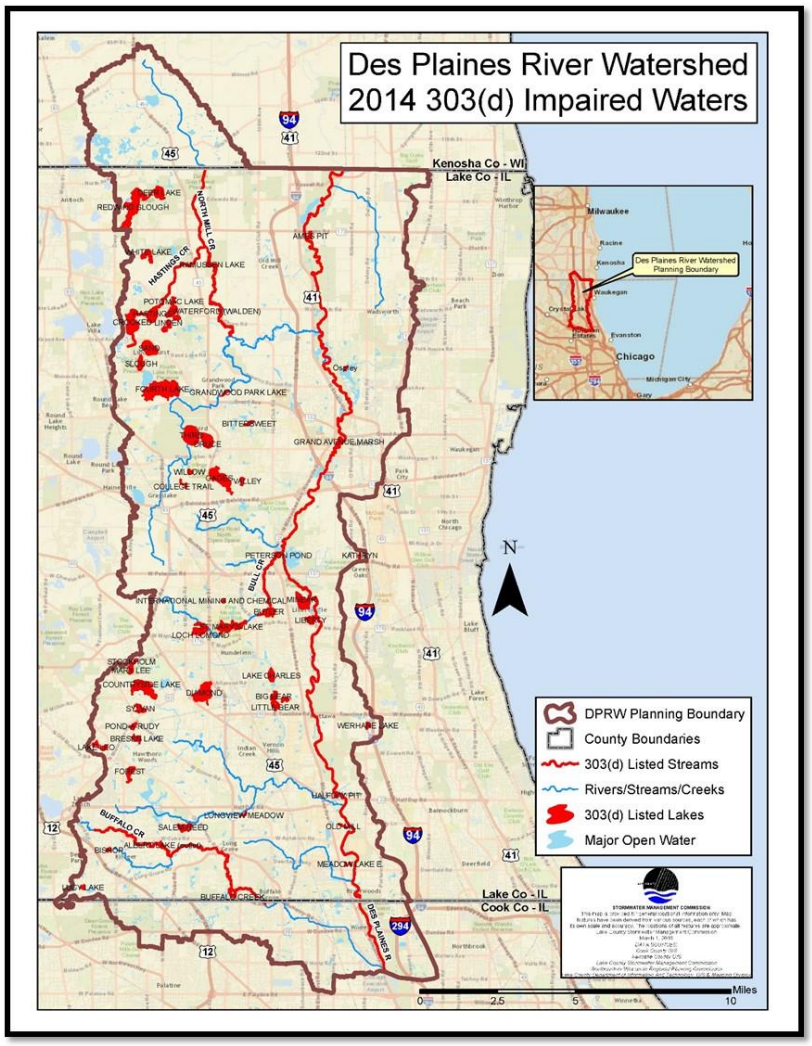

Figure 1-4: Des Plaines River Watershed 2014 303(d) Impaired Waters

The plan also makes recommendations for watershed stakeholders to implement to preserve, manage and restore natural resources as well as prevent actions that will cause or exacerbate unintended water quality and flood damage problems. Water doesn't flow within political boundaries so watershed planning improves coordination and cooperation among communities and the land and water resources they share and impact.

1.4 WATERSHED PLAN REQUIREMENTS, PROCESS, & PLAN ORGANIZATION

The primary scope of this project is the development of a comprehensive watershed-based management plan for the 235 square mile DPR watershed planning area that identifies actions to improve water quality and reduce flood risks. The planning approach was designed to help stakeholders from multiple jurisdictions and with various interests to better understand and become engaged in the watershed, with a desired planning outcome to spur implementation of watershed improvement projects and programs that will accomplish the goals and objectives established by this plan. SMC worked with local stakeholders, municipalities, park districts, residents, and others that are connected to the watershed, and hired _____ Consulting to assist in developing a watershed plan for the DPR Watershed.

SMC funded the DPR Watershed grant through the Illinois EPA Section 319 Nonpoint Source Pollution Control Grant Program. Section 319 grants are available to local units of government and other organizations to protect water quality in Illinois. Projects must address water quality issues relating directly to nonpoint source pollution. Funds can be used for the implementation of watershed management plans including the development of information/education programs and for the installation of best management practices. To be eligible for Section 319 funds however, watershed projects are required to have an Illinois EPA-approved watershed-based plan or **TMDL** implementation plan that meets the watershed-based plan requirements.

TMDL: A pollution budget and includes a calculation of the maximum amount of a pollutant that can occur in a waterbody and allocates the necessary reductions to one or more pollutant sources.

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The DPR Watershed Plan is designed to meet the nine minimum elements required by the U.S. EPA for a watershed-based plan.

Once completed and reviewed by SMC staff and the watershed planning committee, the SMC approved the start of an official 30-day public review and comment period for the draft watershed plan. A public hearing was held at the county seat during the 30-day public comment period. Notice of the hearing was published in the Lake County News Sun (a newspaper of general circulation in the county) prior to the hearing. The Lake County Stormwater Management Commission will review and consider the comments received and may amend or approve the plan and recommend it to the county board for adoption. The county board may then enact the proposed plan by ordinance as an amendment to the Lake County Comprehensive Stormwater Management Plan.

NOTEWORTHY - U.S. EPA'S NINE ELEMENTS OF A WATERSHED –BASED PLAN

1) Identification of the causes and sources or groups of similar sources of pollution that will need to be controlled to achieve the pollutant load reductions estimated in the watershed-based plan;
2) Estimate of the pollutant load reductions expected following implementation of the management measures described under number 3 below;
3) Description of the non-point source management measures that will need to be implemented to achieve the load reductions estimated under number 2 above and an identification of the critical areas in which those measures will be needed to implement the plan;
4) Estimate of the amounts of technical and financial assistance needed, associated costs, and/or the sources and authorities that will be relied upon, to implement the plan;
5) Public information/education component that is designed to change social behavior;
6) Plan implementation schedule;
7) Description of interim, measurable milestones;
8) Set of criteria that can be used to determine whether pollutant loading reductions are being achieved over time;
9) Monitoring component to evaluate the effectiveness of the implementation efforts over time.

1.5 PREVIOUS & RELATED STUDIES & PLANS

Several previous and concurrent studies of the watershed led to floodplain, biological, habitat, water quality, and demographic/geographic data. This information was collected, analyzed and summarized, and supplemented with newly collected field data, which was then used to reach conclusions regarding the condition of the resources in the watershed. Field studies completed in association with this planning effort include: detailed stream and detention basin inventories performed by SMC and a biological and water quality monitoring of the DPR watershed performed by the DRWW and the Illinois EPA. Copies of previous reports and studies and summaries of collected field data and reports are included in the **Appendices** of this report.

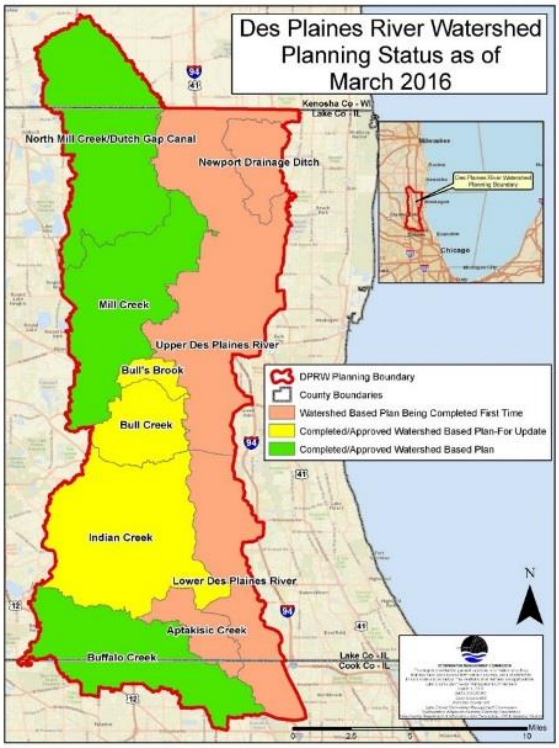

Figure 1-5: Des Plaines River Watershed Planning Status

Table 1-1: Watershed-Based Plan Status' (April 2016)

Previous & Related Studies & Plans	Year Completed
Indian Creek Watershed Based Plan	2009
Bull Creek-Brook Watershed-Based Plan	2009
North Mill Creek-Dutch Gap Canal Watershed-Based Plan	2011
Mill Creek Watershed and Flood Mitigation Plan	2014
Buffalo Creek Watershed-Based Plan	2015
Lake County Lake Reports	
***DRAFT* Lake County Wetland Restoration and Preservation Plan**	To be completed 2017
Lake County All Natural Hazards Plan	2012
Lake County Flood Problem Areas Inventory	2016
Des Plaines Phase I Report	
Des Plaines Phase II Report	2013
Des Plaines River Watershed Implementation Plan	
Des Plaines River Wetland Restoration Study	2017
Des Plaines River Wetland Mitigation Banking Study	
Des Plaines Strategic Subwatershed Implementation Plan	2004
Upper Des Plaines River Area Assessment	
Floodplain Studies	
Lake County Green Infrastructure Strategy	

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1.6 USING THE PLAN

1.6.1 WHO SHOULD USE THIS PLAN

This plan will be of limited use without the commitment of watershed stakeholders to improve, restore, manage and steward watershed resources. As the primary land use, development and infrastructure authorities in the watershed, municipal and county agencies and elected officials will have a significant amount of influence and responsibility for implementing this plan. These public agencies represent the interests of their constituents and are strongly influenced by every community resident or landowner. Therefore, each community member has the potential to influence the actions that occur in the DPR Watershed through active participation.

State and federal agencies and elected officials and private organizations such as lake associations, homeowner associations and private conservation organizations will also play an important role. State and federal agencies can support the implementation of this plan by approving projects in a timely fashion, supporting projects with funding, and providing technical information, tools and resources to assist local authorities and watershed organizations in their efforts. Private associations and organizations have the ear and influence of their members and can provide significant contributions to land and water protection. Individual watershed residents and landowners must also accept responsibility for managing their own land and water resources responsibly and for working with others to implement this plan.

All jurisdictions, organizations and private landowners and residents will have to work together in order to successfully protect and restore the watershed. The power of water is immense, as anyone who has experienced flooding can attest. The flow of water also does not respect property lines or jurisdictional boundaries, therefore, everyone needs to share in the long-term stewardship responsibility, and share the costs and benefits of watershed improvements.

The success of plan implementation will also be determined by the watershed organization and its ability to coordinate, communicate, and manage activities for stakeholders. Watershed organizations are generally formed from the organizations and/or individuals who participated in the watershed planning process. Watershed organizations often become the drivers of implementing the watershed plan and providing educational outreach to the community. This watershed organization will be the primary mechanism to engage the general public in watershed activities, to support the implementation of the watershed plan, and to voice their concerns and celebrate their successes in restoring watershed resources.

1.6.2 HOW TO USE THIS PLAN

For those unfamiliar with watershed planning, this document may appear overwhelming. There are pages of information to navigate, containing a lot of tables and maps that report on the condition of the watershed, and many costly recommendations that a lone individual could not possibly begin to implement. These recommendations are for public agencies to consider. But there are also a number of straightforward actions that each person in the watershed can take to improve the watershed. Every action, no matter how small, when undertaken by many, or key landowners can have a positive impact on improving the watershed. To get a general understanding of what this plan is about, please read the Executive Summary, which also includes a

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list of top priority actions for each stakeholder group. For additional details, browse the table of contents and flip to the relevant section you are interested in.

To find out…

- What this plan is intended to accomplish, read about the watershed issues, opportunities, goals and objectives in Chapter 2.
- Detailed information about watershed resources and condition, read the section(s) of interest in Chapter 3
- What the problems are facing the watershed, Chapter 4 includes a summary and analysis of watershed problems that need to be addressed by the Action Plan.
- Detailed information about flooding, including the flood events of 2008 and 2013, a flood problem inventory, and strategies for flood damage reduction, turn to Chapter 5.
- What kind of actions can be taken to improve the watershed, the Action Plan in Chapter 6 includes a watershed-wide programmatic action plan that includes general recommendations; and a site-specific action plan directed to critical areas of the watershed that identifies actions that can be taken to help fix problems in a specific area.
- What kind of funding may be available to provide cost share for implementing watershed improvement projects, refer to the Funding Sources in Chapter 7.
- What sort of outreach and education is needed so that watershed stakeholders understand the watershed problems, their role in the watershed, and have the capability to implement the Action Plan, refer to Chapter 8 the Watershed Education and Outreach Strategy.

REFERENCES

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